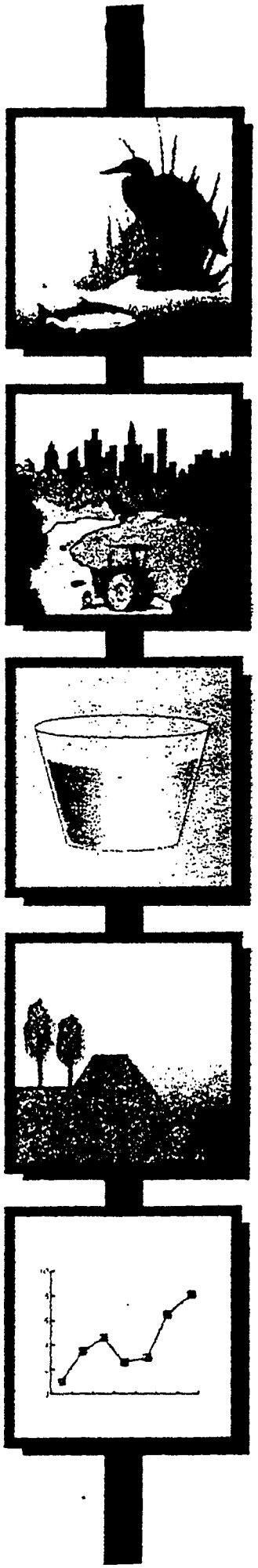


CALFED
BAY-DELTA
PROGRAM

Executive Summary

December 1998

CALFED BAY-DELTA PROGRAM
REVISED PHASE II REPORT
EXECUTIVE SUMMARY

The CALFED Bay-Delta Program Revised Phase II Report presents a framework for restoring ecological health to the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta), providing more reliable water supply for agriculture and cities, and improving drinking water quality in California.

While the Revised Phase II Report represents a great stride forward in developing a balanced program to solve California's environmental and water needs, it is still very much a work in progress. Research and study, negotiations among stakeholders and state and federal public agencies, and public meetings will continue in 1999.

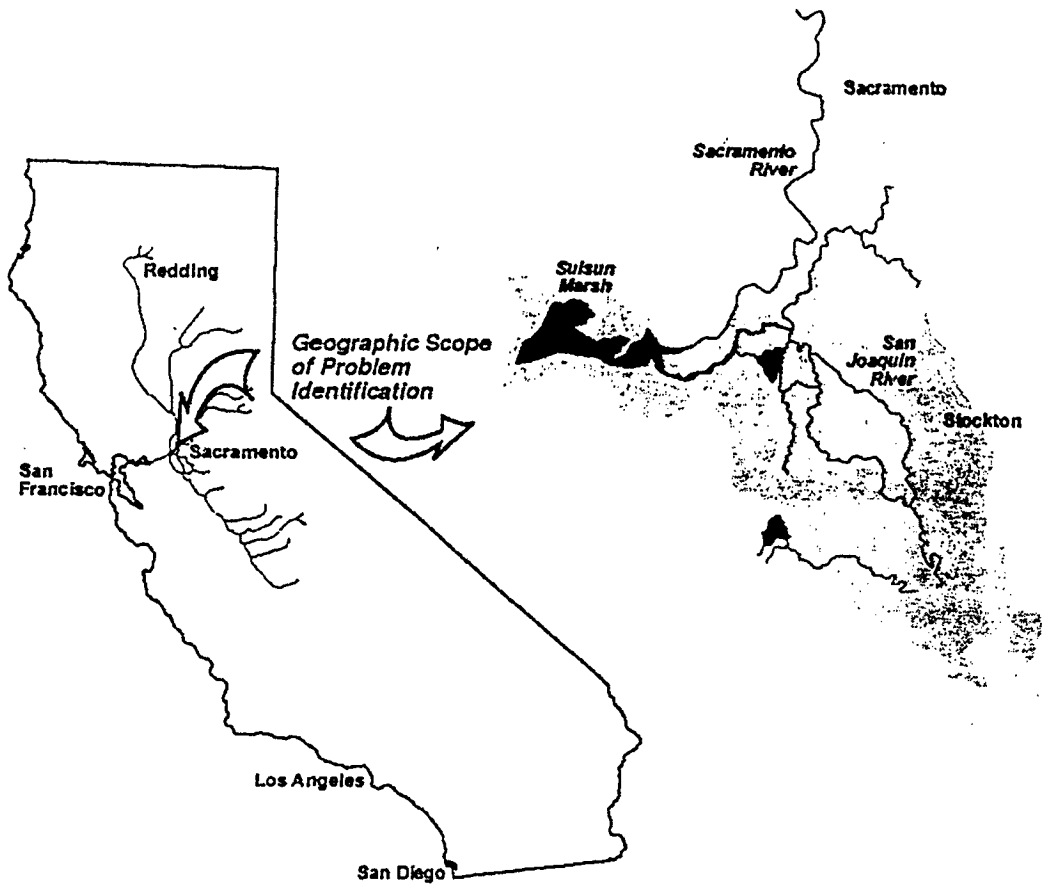
The draft preferred program alternative described in the Revised Phase II Report seeks to achieve improvements in the four interrelated problem areas: ecosystem health, water quality, levee system integrity, and water supply reliability. The "programmatic" nature of the alternative means that actions are described in broad terms. Site specific actions will be implemented after the broad program outline is adopted, and additional environmental and other permit reviews conducted. All of these actions will take an adaptive management approach: with careful monitoring, future actions will be modified as more is learned about the system and how it responds.

The Revised Phase II Report is available on CD-ROM, in print, and on the CALFED web site http://calfed.ca.gov.

Setting

The Bay-Delta is the largest estuary on the West Coast, a haven for plants and wildlife, supporting over 750 plant and animal species. It supplies drinking water for two-thirds of the people in California and irrigation water for over 7 million acres of the most productive agricultural land in the world.

The Bay-Delta is also the hub of California's two largest water distribution systems – the Central Valley Project (CVP) operated by the U.S. Bureau of Reclamation, and the State Water Project (SWP) operated by the California Department of Water Resources. In addition to these two major projects, over 7,000 permitted diverters have developed water supplies from the watershed feeding the Bay-Delta estuary. These diversions, along with the introduction of exotic species, water pollution and numerous other factors have had a serious impact on the fish and wildlife resources of the estuary.



Geographic Scope for Problems and Solutions

The geographic **scope for the problems** consists of the legally defined Delta, Suisun Bay (extending to the Carquinez Strait) and Suisun Marsh.

The geographic **scope for developing possible solutions** includes a much broader area that extends both upstream and downstream of the Bay-Delta. This solution scope includes the Central Valley watershed, the Southern California water system service area, San Pablo Bay, San Francisco Bay, near-shore portions of the Pacific Ocean out to the Farallon Islands and north to the Oregon border, and the Trinity River watershed, from which flows are diverted into the Bay-Delta system.

MISSION STATEMENT, OBJECTIVES AND SOLUTION PRINCIPLES

The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system.

CALFED developed the following objectives for a solution:

- Provide good water quality for all beneficial uses;
- Improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species
- Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system
- Reduce the risk to land use and associated economic activities, water supply, infrastructure and the ecosystem from catastrophic breaching of Delta levees.

In addition, any CALFED solution must satisfy the following **solution principles**:

- ***Reduce Conflicts in the System*** Solutions will reduce major conflicts among beneficial uses of water.

- ***Be Equitable*** Solutions will focus on solving problems in all problem areas. Improvements for some problems will not be made without corresponding improvements for other problems.

- ***Be Affordable*** Solutions will be implementable and maintainable within the foreseeable resources of the Program and stakeholders.

- ***Be Durable*** Solutions will have political and economic staying power and will sustain the resources they were designed to protect and enhance.

- ***Be Implementable*** Solutions will have broad public acceptance and legal feasibility, and will be timely and relatively simple to implement compared with other alternatives.

- ***Have No Significant Redirected Impacts*** Solutions will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in their entirety, within the Bay-Delta or to other regions of California.

For decades, the system has struggled to meet the competing demands of the environment and water users, while maintaining good water quality and a levee system that protects local towns and infrastructure from flooding and contaminating the state's water supply. Today, the system is not adequately meeting any of these needs.

The CALFED Process

The CALFED Bay-Delta Program, a cooperative state and federal effort, was established to reduce conflicts in the system by solving problems in ecosystem quality, water quality, water supply reliability, and levee and channel integrity. Its mission is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system.

CALFED

State Agencies	Federal Agencies
Resources Agency of California*	U.S. Department of Interior
- Department of Water Resources	- Bureau of Reclamation*
- Department of Fish and Game	- Fish & Wildlife Service *
	- Bureau of Land Management
	- U.S. Geological Survey
California Environmental Protection Agency	U.S. Army Corps of Engineers*
- State Water Resources Control Board	U.S. Environmental Protection Agency*
California Department of Food Agriculture	U.S. Department of & Commerce
	- National Marine Fisheries Service*
	U.S. Department of Agriculture
	- Natural Resources Conservation Service*
	- U.S. Forest Service
	Western Area Power Administration

* Co-lead agencies for EIS/EIR

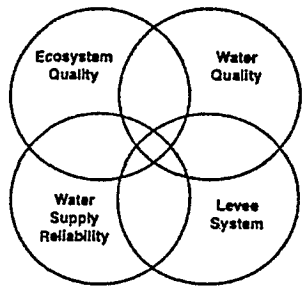
The CALFED Program began work on developing a long-term plan for fixing the Bay-Delta in May 1995. In cooperation with environmental, urban and agricultural interests, CALFED developed potential alternative solutions that were released in a draft programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) in March 1998. Several thousand comments on the alternatives were received through a 105-day public comment period. In conjunction with extensive additional technical analyses, these comments were used to develop the draft preferred program alternative.

To fulfill CALFED's joint mission – to restore ecological health and improve water management in the Bay-Delta system – the draft plan relies on a comprehensive water management strategy and an ecosystem restoration plan that includes an innovative environmental water account.

Draft Preferred Program Alternative

The draft preferred program alternative begins with strategies for solving each of the four Bay-Delta problem areas in an integrated manner. These strategies are interwoven and each must be viewed in the context of the other strategies. For example, to fully implement the Ecosystem Restoration Program (ERP), CALFED must also have a successful strategy to provide the improved water quality that is needed by the ecosystem. The levee strategy provides new opportunities for improving levee-associated habitat for Delta species. Also, water for environmental uses will benefit from improved water supply reliability.

Key Strategies for the Four Problem Areas



Levees – Delta levees are critical to the physical integrity of the Delta, and the integrity of the state's water system. CALFED will perform risk assessment of all factors that can contribute to levee failure and the consequences of failure to Delta land uses, the ecosystem, water quality and water supply reliability, and implement appropriate risk management considering all available options. Levee improvements will incorporate successful techniques for restoring, enhancing or protecting ecosystem values.

Water Supply Reliability – The CALFED Program has proposed a water management strategy to ensure water supply reliability that recognizes the variability of water supply and demand in California. CALFED's water supply reliability goals are to:

- Reduce water diversion conflicts between environmental uses and consumptive uses;
- Decrease drought impacts for the environment and water users;
- Increase water supply availability by providing a means for water users and the environment to acquire additional water at high priority times and places;
- Increase operational flexibility by improving the ability of the system to respond to unforeseen or unpredictable events;
- Increase the utility of water used for all beneficial uses by improving water quality.

Seven general categories of tools are included in the management strategy, all of which are being used in California to some degree: water conservation; water recycling; water transfers, both short-term and long-term; storage, both groundwater and surface water; watershed management; water quality control; and monitoring and real-time diversion management.

A creative new component of this strategy could be an environmental water account. Through the environmental water account, environmental managers could control a package of assets that provides greater flexibility in helping fisheries recover. With an environmental water account, decision-makers could react quickly to the real-time actions of fish, which do not always act according to models and scientific analyses. CALFED intends to implement a pilot program in 1999 to refine the environmental water account concept and its role in the final plan.

Possible assets include a block of water; access to as much as 300,000 acre-feet of refillable, high priority storage; ability to option and purchase water; access to canals and facilities; funding for a conservation/recycling program that will yield water for the environment; the ability to flexibly apply export standards to create water for the environment; and a contingency fund. The environment would be able to trade assets with other water users for future water use.

Water Quality – CALFED's strategy is to provide good water quality for all beneficial uses, and includes reducing or eliminating elements that degrade water quality at its source. In addition, CALFED is committed to continuously improving source water quality that allows municipal water suppliers to deliver safe and affordable drinking water that reliably meets and, where feasible, exceeds applicable drinking water standards. CALFED program actions will be aimed at reducing the levels of problem pollutants such as bromide, organic carbon and pathogens in Delta drinking water sources. CALFED will consider additional water management options as necessary to achieve its goals and objectives, including, but not limited to, provision of alternative sources, use of storage facilities to improve drinking water quality, and an isolated facility to provide source water of better quality.

Ecosystem Restoration – CALFED's ecosystem restoration program (ERP) is the largest, most comprehensive, and most inclusive environmental restoration program in the United States. It provides a new perspective to restoration science by focusing on the rehabilitation, protection or restoration of ecological processes that create and maintain habitats needed by fish, wildlife and plant species dependent on the Delta and its tributary systems. This strategy emphasizes solid science, adaptive management and local participation: an innovative approach that is becoming a model for similar efforts throughout the nation. By restoring the natural processes that create and maintain diverse and vital habitats, CALFED aims to meet the needs of multiple plant and animal species while reducing the amount of human intervention required to maintain habitats.

Adaptive management is an essential program concept, part of each of these strategies. It is necessary to constantly monitor the system and adapt actions that are taken to restore ecological health and improve water management.

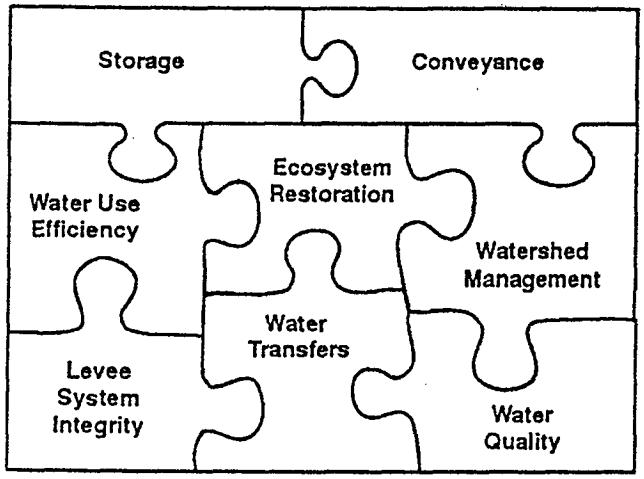
Delta Conveyance – In addition to these four strategies, CALFED must consider how various Delta conveyance configurations – how water is moved through the Delta – would help implement the strategies. The Delta conveyance strategy must consider fisheries and water quality for in-Delta uses and drinking water. The existing Delta channels will be an integral part of any CALFED decision

for Delta conveyance. The reliance on these channels provides a shared interest in restoring, maintaining, and protecting Delta resources, including water supplies, water quality, levees, channel capacities, natural habitat and the Common Delta Pool.

CALFED's Delta conveyance strategy is to develop a through-Delta conveyance alternative based on the existing Delta configuration with some modifications, evaluate its effectiveness and add additional conveyance and /or other water management actions if necessary to achieve CALFED goals and objectives.

Program Elements

CALFED developed eight program elements to carry out the strategies described above. The draft preferred program alternative is comprised of these program elements, to be implemented in stages over the next 30 years. Each of the elements contributes to improvements in the four problem areas.



Long-term Levee Protection Plan – The goal of the Levee Protection Plan is to improve levee stability, which will contribute to water supply reliability and water quality improvements for human consumption and the environment. The levees are an integral part of the Delta landscape and are key to preserving the Delta's physical characteristics and processes.

Actions are based on the successes of existing programs. Levee protection actions provide base-level funding to reconstruct all Delta levees to a particular standard, and additional funding for special habitat improvement and levee stabilization projects. The program will also implement best management practices (BMPs) to control subsidence on levees; assess overall risk to the levee system and develop recommendations to manage the risk; and establish an emergency management plan.

Water Quality Program – Improving water quality is one of the CALFED Program's basic objectives. CALFED is committed to achieving continuous improvement in the quality of the waters of the Bay-Delta Estuary for all beneficial uses and maintaining this quality once achieved. Some actions to achieve improvement can begin immediately; others will rely on comprehensive monitoring, pilot studies and research.

The Water Quality Program will focus on improving drinking water quality and reducing impacts from urban and agricultural pesticide use; trace metals; mercury; selenium; bromide; salinity; turbidity and sedimentation; low dissolved oxygen; and toxicity of unknown origin.

Ecosystem Restoration Program – The principal mechanism that CALFED will use to restore the health of the Bay-Delta ecosystem is the Ecosystem Restoration Program (ERP). The ERP emphasizes the restoration of ecological processes in order to create and maintain the diverse and vital habitats of the multiple plant and animal species in the Bay-Delta system. To do so, the ERP identifies over 700 programmatic restoration actions, including restoring, protecting and managing diverse habitat types representative of the system; restoring critical flows; improving Delta outflow during key springtime periods; developing prevention and control programs for invasive species; and modifying or eliminating fish passage barriers.

Water Use Efficiency Program – Water conservation is a concept broadly supported by Californians. The Water Use Efficiency Program includes both water conservation measures for agricultural, urban and wildlife refuge uses, and water recycling actions. The program relies on appropriate conservation measures and government assistance to help users comply with the programs. Existing state and federal programs will be expanded to provide increased levels of funding and technical assistance at the local level. A high-level of water use efficiency is expected to be required as a condition for permitting new surface storage projects.

CALFED agencies will work with the Legislature and stakeholders to develop state legislation that requires appropriate measurement or metering of water use for all water users in the state. Technical and stakeholder issues will be addressed to define "appropriate measurement," which is expected to vary by region. The definition will include the nature of regional differences, appropriate point of measurement, and the feasible level of precision.

Water Transfer Program – Water transfers are currently an important water management tool and have the potential to play a more significant role. The Water Transfer Program proposes a framework of actions, policies and processes that will facilitate water transfers and further develop a statewide water transfer market that can move water between users, including the environment, on a voluntary and compensated basis.

Key components of this program are establishing a California Water Transfers Information Clearinghouse to provide complete and accurate information and facilitate assessment of potential third-party impacts; coordinating among agencies to formulate policy and standardized procedures; and developing a process to identify transferable water, reservoir refill and carriage water criteria and costs for transporting water through state and federal conveyance facilities.

The Watershed Program will provide financial and technical assistance to local watershed programs, and aid in the coordination and integration of these programs with CALFED. Watershed management and protection activities can make improvements in each of the four CALFED problem areas – ecosystem quality, water quality, water supply reliability, and levee and channel integrity.

In addition, CALFED will investigate the reoperation of small hydroelectric power reservoirs for achieving ecosystem and local water supply benefits.

Storage – Both surface and groundwater storage are important water management tools, and some storage will be necessary to achieve water supply reliability goals. The appropriate mix between surface and groundwater storage will be determined during Stage 1 of program implementation. (Stage 1 is expected to be the first seven years of program implementation.) Target volume for groundwater banking is 500,000 acre-feet of storage.

CALFED will focus on consideration of off-stream reservoir sites for new surface storage, but will consider expanding existing on-stream reservoirs. Under the ERP, some dams and stream obstructions will be removed to open areas of fishery habitat. Even with new surface storage, there will be fewer stream miles blocked after implementation of the CALFED Program. CALFED has reduced the number of potential surface storage sites from 52 to 14, and the list will be further narrowed to 3 to 5 by the time of program certification. Should new surface storage be considered necessary to meet CALFED goals, site selection would take place in years 4-5 of program implementation.

Conveyance – CALFED's strategy is to use the existing Delta system with some modifications, evaluate its effectiveness, and add additional conveyance and/or other water management actions if necessary to achieve CALFED goals and objectives. These actions will be continually monitored, analyzed and improved as necessary to meet CALFED goals.

Potential Stage 1 improvements to the existing south Delta region include new screens for the SWP and CVP export facilities, changes in operations, channel enlargements, and other improvements to increase water supply reliability while decreasing impacts on fish and Delta water users. In the north Delta region proposals include channel enlargement for flood control, changes in Delta Cross-Channel operations, and consideration of a new screened diversion from the Sacramento River to the interior Delta to help balance water quality and fisheries concerns.

If CALFED's goals and objectives, such as its commitments to continuous water quality improvement and fisheries restoration, cannot be accomplished by this strategy during Stage 1, the preferred program alternative includes additional actions that may be taken toward these goals and objectives after thorough assessment of a variety of factors. For example, a decision to proceed with implementation of an isolated facility may occur if, in combination with vigorous implementation of relevant program elements and improvements to through-Delta conveyance and consideration of other water management options, an isolated conveyance facility is still deemed necessary for significantly advancing CALFED's commitment to seek continuous water quality improvement. An isolated conveyance facility also may be necessary if there is inability to achieve fishery recovery due to continuing impacts of diversions from the south Delta.

1999 Actions

Prior to final program approval, several actions need to be taken during 1999.

1. Make a decision on the overall future CALFED management structure, describing how the overall program will be managed, and assign responsibilities for each of the program's elements to a new entity, existing entity, or combination of entities. Recommendations for required legislation will be made if necessary.

2. Make a decision on the entity that will carry out the work of the ERP. Many stakeholders agree that a new organization needs to carry out the ERP tasks.

3. Complete the Conservation Strategy, which includes goals and actions for species recovery and provides the framework for incidental take associated with Stage 1 actions.

4. Complete strategic plans for each program element, with measurable performance goals; Stage 1 actions; financing; recommended governance; and key milestones and decision points. These plans will provide agencies, stakeholders and the public a more complete picture of what can be expected from each program element.

5. Develop the Agricultural Water Use Efficiency Program.

6. Complete a recommendation on an Urban Water Conservation Certification entity and recommended legislation, if necessary.

7. Develop an operational plan for water allocation, utilizing the State Water Resources Control Board's water rights decision for allocation of responsibility to meet flow requirements for Water Quality Control Plan 95-6, and consistent with all regulatory requirements, including state and federal Endangered Species Acts and requirements related to the Trinity River.

8. Identify the first group of Stage 1 projects, and implement an environmental documentation and permit coordination process. To allow early Stage 1 projects to move forward efficiently, a process to coordinate and consolidate CEQA/NEPA requirements will be implemented.

9. Complete a Programmatic Section 404 Assurance Package, with a clearly defined 404 permitting process including appropriate decision criteria.

10. Complete an evaluation of the merits of including the Suisun Marsh levee system in the levee program.

11. Establish a working group of stakeholders and agency representatives to identify appropriate linkages, and develop coordination mechanisms and regulatory actions to assure that agency actions are consistent with, and conducive to meeting CALFED's water quality goals.

12. Complete economic analyses of water use efficiency options and new facilities to identify least-cost ways of meeting CALFED objectives.

13. Define a process to provide linkages between program actions, including measures of success. Actions will be grouped to provide additional assurances by balancing benefits.

14. Develop and implement an Environmental Water Account pilot project.

15. Complete the Financing Plan for Stage 1 of the proposed program. Actions include refining cost estimates; determining the availability of existing funding sources; developing mechanisms to implement the "beneficiary pays" principle; establish a policy granting credit for contributions to the Category III Program; seek federal authorization/appropriation for year 2000; assess potential for private capital as a funding source; finalize cost-share agreements among state and federal governments and beneficiaries; and evaluate the need for user fees.

16. Begin implementation of the Comprehensive Monitoring, Assessment and Research Program.

Next Steps

The CALFED Program will hold several evening public orientation sessions on the draft alternative during January 1999.

A revised draft programmatic EIS/EIR will be released in spring 1999 for additional public review and comment. Final program decisions by the state and federal governments are expected by the end of 1999. Program implementation could then begin in the year 2000.

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